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BACKGROUND

This is a draft revision of the 2008 Fuel Model Guide to Alaska Vegetation, with edits made as of March 2016. The Fuel Model Guide to Alaska Vegetation was developed by an interagency team of fire practitioners and vegetation mappers/specialists in 2008. It crosswalked vegetation types described in the Alaska Vegetation Classification (Viereck et al. 1992) with three fuel model sets:

- 40 Fire Behavior Fuel Models (FBFM40; Scott and Burgan 2005)
- 13 Fire Behavior Fuel Models (FBFM13; Anderson 1983)
- Canadian Forest Fire Behavior Prediction System (CFFBPS; Taylor et al. 1997)

The 2008 Fuel Model Guide provided an excellent foundation for understanding fuels and vegetation in Alaska, but it was felt that an update was needed for several reasons. Scott and Burgan's (2005) 40 Fire Behavior Fuel Models were relatively new when the original Guide was being developed, and since then we have more experience working with them in Alaska. Likewise, we have improved our use and understanding of the CFFBPS. Advances in spatial fire behavior modeling on a landscape level have enabled us to more readily compare modeled to actual fire behavior under different conditions, allowing us to better assess fuel model assignments. The advent and use of the LANDFIRE landscape in modeling applications has resulted in the need for crosswalks to LANDFIRE parameters, which will be available in the final revision or as an online resource. When complete, the revised guide will include better photo documentation, more fire behavior comments, suggestions for alternate fuel models to use under different conditions, and help with characterizing post-fire habitats. A table summarizing changes to fuel models between the original Guide and the revision is included at the beginning of the document.

YOUR INPUT IS NEEDED

We hope to finalize the revision in winter 2016-2017. We are looking for feedback from people familiar with fire in Alaska and from those who have an opportunity to observe fire behavior during the 2016 fire season, particularly in Closed Black Spruce and Open Black Spruce forest types.

The original guide is posted at https://www.frames.gov/partner-sites/afsc/partner-groups/fire-behavior-modeling-group/modelingproducts-guides/#FuelModelGuide . For reference, the Alaska Vegetation Classification by Viereck et al. can be found at: http://137.229.141.57/wp-content/uploads/2012/05/Viereck-et-al.-1992-AlaskaVegetation-Classification.pdf.

HELPFUL HINTS FOR USING THE GUIDE:

1. The Alaska Vegetation Classification (Viereck *et al* 1992) groups communities into the following classes based on canopy cover:
    a. Woodland: 10 – 24% canopy cover
    b. Open: 25 – 59% canopy cover
    c. Closed: ≥60% cover

2. The Canadian Forest Fire Behavior Prediction System (CFFBPS) includes conifer, mixedwood, deciduous and openland fuel types. Mixedwood, deciduous, and openland types are categorized by seasonality as follows:
    a. Mixedwood fuel types include a seasonal component: M-1 for leafless or M-2 for green. The also include a modifier that describes the percentage of confers in the stand. Two additional mixedwood fuel types describe forests with dead conifers in the leafless state (M-3) and dead conifers in the green state (M-4)
    b. The Deciduous fuel type includes a seasonal component: D-1 for leafless, D-2 for green
    c. The Openland fuel type includes matted grass (O-1a) and standing grass (O-1b)

3. Primary fuel model assignments represent average conditions, which is also the case for the LANDFIRE landscape. Alternative fuel models are suggested for milder or more extreme situations may be found in the Fire Behavior Comment section.

4. We assigned fuel models/types so that rate of spread would be similar among the three different classification systems. FBFM40 is designed to represent average conditions, but FBFM13 is intended to represent conditions during the severe portion of the fire season. Therefore, the FBFM13 assignments may represent lower fire behavior that what people might be used to. Attention was focused on fire behavior rather than whether a vegetation type fit into grass, shrub, timber, or slash groups.

5. FBFM13 and FBFM40 simulate surface fire behavior at the flaming front, assume homogeneity and continuity for the fuelbed, and should not be used for predicting fuel consumption, smoke production, or crown fire.

6. Most vegetation descriptions have not been edited and will likely be revised for the final version.

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